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January 1965

PHOTOGRAPHIC INTERPRETATION REPORT

# COMMUNICATIONS FACILITIES NEAR ILI USSR



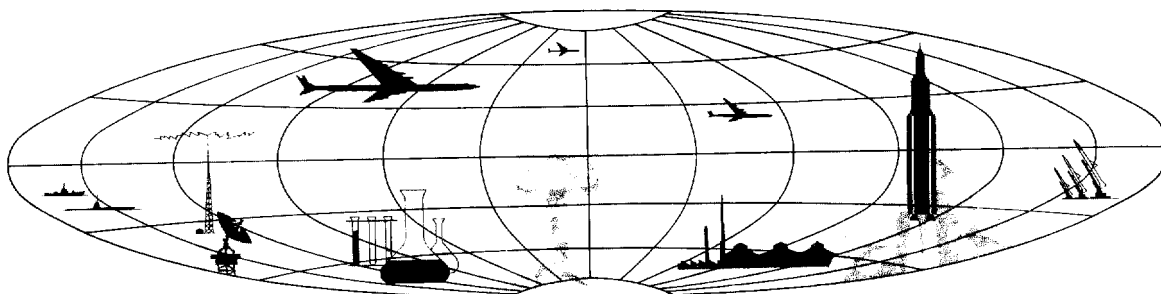
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## COMMUNICATIONS FACILITIES NEAR ILI, USSR

### INTRODUCTION

This report describes 2 communications receiving facilities in the vicinity of Ili (Figure 1), one of which contains 2 distinctive, pinwheel-shaped ground-scar sites. By specific request, these ground scars are considered in detail and are compared with other, previously reported scars near Semipalatinsk 1/ 2/ which had a generally similar configuration.

For the 2 communications receiving facilities--one a fishbone and the other a rhombic antenna high-frequency (HF) installation--complete mensural and technical data are provided, including probable operating frequencies and correspondents. Although this information is considered to be substantially correct as given,

it should not be taken as absolute because the obliquity of the [ ] photography, even when rectified, and the small scale of the [ ] photography result in certain unavoidable dimensional and alignment errors. However, it is believed that no more than plus-or-minus [ ] need be allowed in the given azimuths.

As far as the pinwheel-shaped ground-scar sites are concerned, it is felt that their location at a large communications receiving facility is indicative of their probable future function. Although they are still in an early stage of construction, the fact that all other ground scars in the area can be specifically related to antennas makes it reasonable to assume that, when completed, the pinwheel-shaped scars will also be so related.

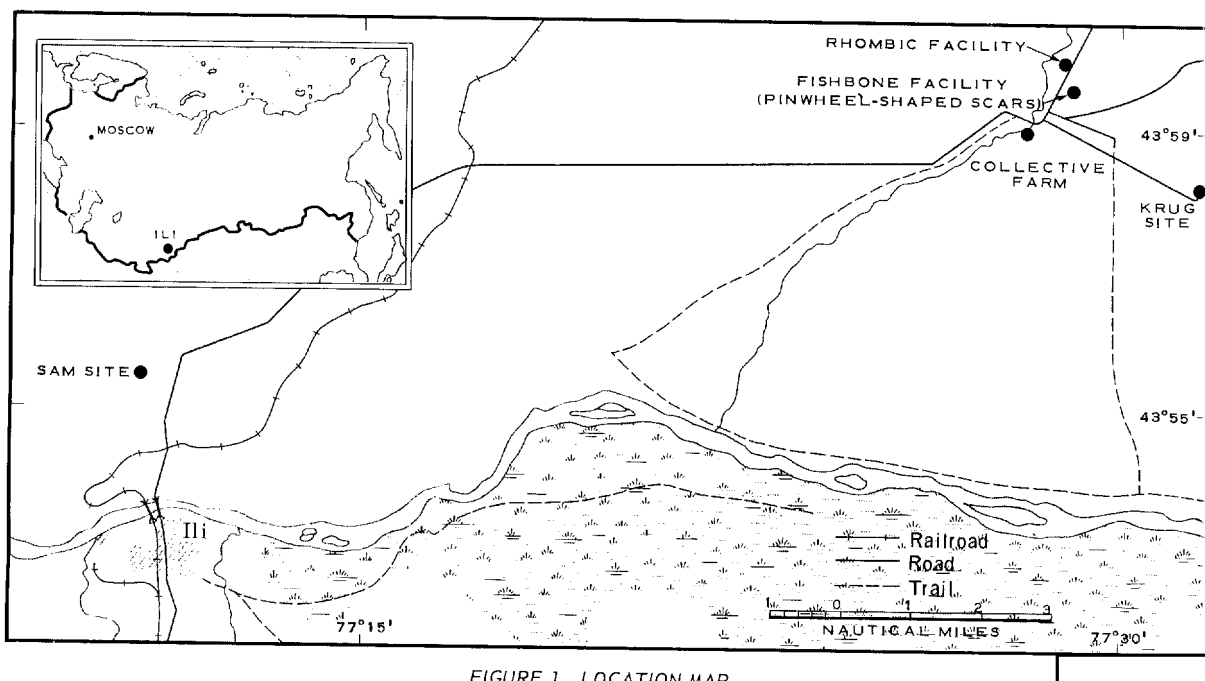


FIGURE 1. LOCATION MAP.

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## FISHBONE ANTENNA HF COMMUNICATIONS RECEIVING FACILITY

This facility (Figures 2 and 3) consists of an extensive secured area enclosing the 2 pinwheel-shaped ground-scar sites, 13 fishbone IIF communications receiving antennas, and a support area. It is situated 14 nautical miles (nm) east-northeast of Ili and 50 nm north-northeast of Alma-Ata at 43-59N 77-29E.

### Pinwheel-Shaped Ground Scars

Ground scarring at this facility forms 2 generally similar pinwheel-shaped sites having a center-to-center separation of 1,420 feet. An

imaginary line drawn between the 2 sites would run on an azimuth of [REDACTED]. The eastern site--the more advanced of the two--consists of 6 radials laid out in an unbalanced 6-pointed pinwheel, or starlike, configuration. Spoil at the ends and sides of the radials indicates that construction is still continuing. The western site is in a comparatively early stage of construction; [REDACTED] it consisted of earth-moving scars and spoil piles at 4 of the radials, and faint scarring or survey lines at the remaining 2.

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At both sites, a small unidentified circular shape--possibly a small excavation of undetermined dimensions--is situated near the hub or center of the configuration. The radial scars, when measured from the hub, vary in length from

*Table 1. Comparison of Ground Scars at Semipalatinsk and Ili*

	Semipalatinsk	Ili
25X1D	[REDACTED]	
25X9	[REDACTED]	None known
	Electronics activity in area	1 nm to 5 HF fishbone receiving antennas
		1,000 - 2,500 feet to 13 HF fishbone receiving antennas
		0.5 nm to 7 HF rhombic receiving antennas
		2.5 nm to KRUG site
25X9	Nearest support	Immediately adjacent to previously existing support area serving KRUG site and communications facilities
	Original appearance	Generally similar pair of radial ground scars in an unbalanced pinwheel, or starlike, pattern
	Number of radials	Originally 6 per site have remained unchanged
	Appearance of radial	Broad scar near center tapering to a point at terminal
	Diameter, each site	Approximately 375 feet
	Distance between sites	Center-to-center, approximately 1,420 feet
	Other features	No comparable security measures
		2 possible control buildings
		No comparable feature
		No comparable feature
		Several general support buildings between sites
		No comparable features

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190 to 275 feet, and the points of the radials range from 120 to 195 feet apart. There do not appear to be any objects or equipment at the terminal points of the radials at either site.

The ground scarring is best observed on [ ] photography of [ ] [ ] but early indications of the eastern site are visible on [ ] photography of [ ] [ ] at which time that site consisted of minor earth-moving activity forming an X-patterned ground scar. Activity at both sites can be negated on photography of [ ] [ ]

A parallel listing of pertinent features relating to the ground-scar sites at both Ili and Semipalatinsk has been prepared in outline form to facilitate comparison (Table 1).

#### Antennas and Support

Just to the east of the ground-scar sites is a generally fan-shaped spread of 13 fishbone antennas. On photography of [ ] [ ] there was only 1 fishbone, together with a number of stick masts which formed no determinable pattern. Photography [ ] [ ] showed no apparent change, but by [ ] the facility had been expanded to include its present number of antennas, details of which are given in Table 2.

A support area is situated immediately to the north of the pinwheel-shaped ground scars and was evident on photography of [ ]

[ ] the earliest coverage available for this area. At that time, it consisted of 18 buildings (items 1-18, Figure 3 and Table 3), and was apparently functioning primarily in support of the rhombic facility to the north and a KRUG site situated 2.5 nm to the southwest. (This KRUG site was identified at least as early [ ] and is standard for its type, so that it is given no detailed consideration in this report.) Photography of [ ] showed the addition of 4 storage buildings (items 19-22), and by [ ] the area had been expanded to include its present 29 buildings. The last additions consist primarily of maintenance and control buildings for the increased number of antennas. Further details regarding the individual structures are given in Table 3.

#### RHOMBIC ANTENNA HF COMMUNICATIONS RECEIVING FACILITY

The rhombic antenna HF communications receiving facility is situated 0.5 nm to the north of the fishbone facility and is surrounded by a security fence. It consists of 7 rhombic antennas, a control building, and 3 small storage-type buildings (Figures 4 and 5). The facility is evident--and best interpreted--on photography of [ ] [ ] photog-raphy of [ ] shows no apparent change. Detailed technical data on the antennas are given in Table 4.

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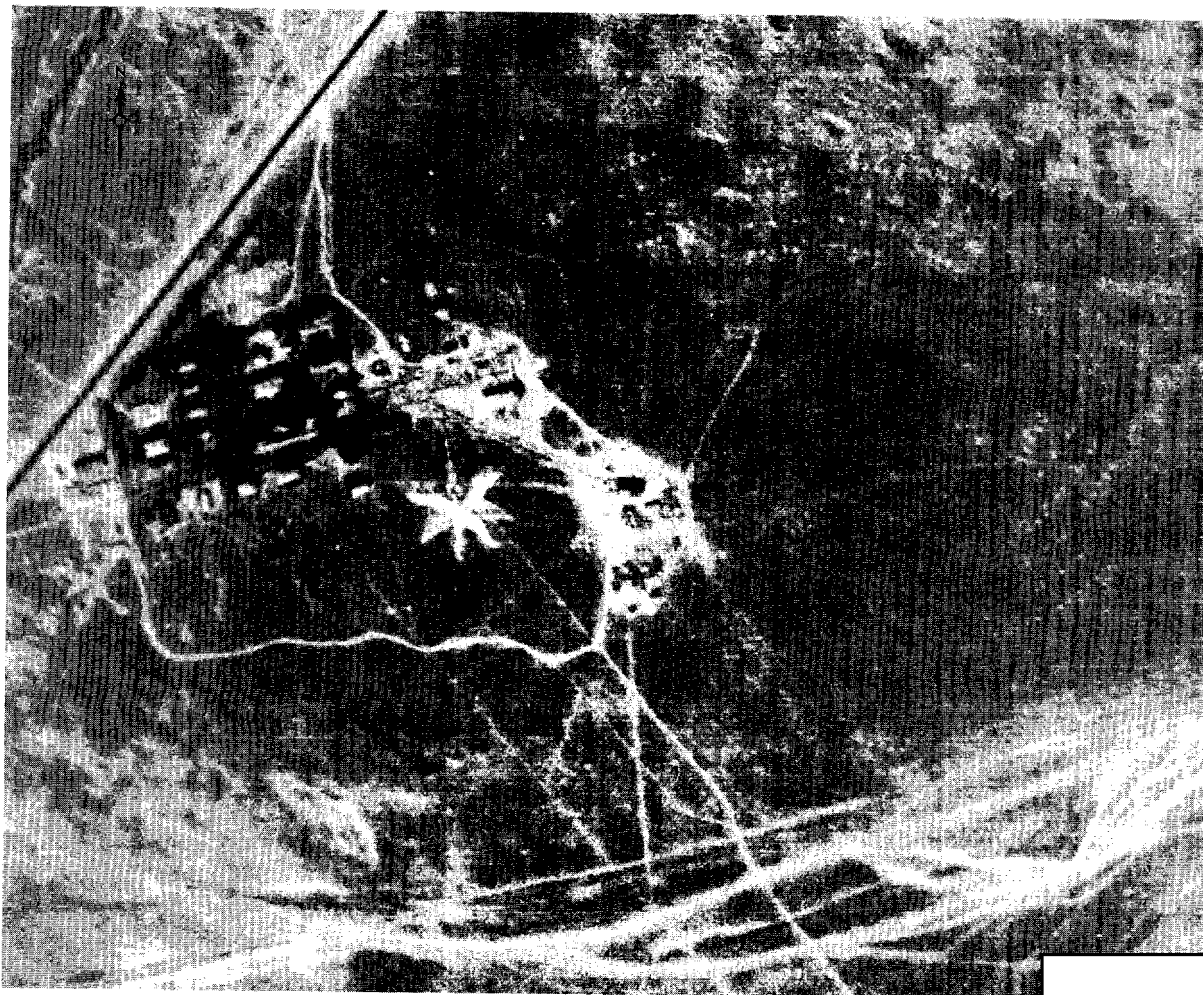


FIGURE 2. FISHBONE ANTENNA HF COMMUNICATIONS RECEIVING FACILITY.

Table 2. Technical Data for 5-3-3-5 Double-Bay Fishbone Antennas near Ili  
(Letters Keyed to Figure 3)

Antenna Letter	Overall Length (ft)	Overall Width (ft)	Probable Correspondent
A	310	170	Leningrad
B	315	175	Murmansk
C	315	175	Vorkuta
D	315	175	Khatanga
E	315	175	Tiksi
F	315	175	Kiyev
G	310	185	Leningrad
H	320	170	Murmansk
I	**	**	Naryan-Mar
J	320	175	Khatanga
K	315	175	Tiksi
L	**	**	Yakutsk
M	315	175	Toward Warsaw

\*Represents one-half of usable dipole length after allowing 10% from overall width for wire curvature, harness, condensers, etc.

\*\*Not measurable; estimated.

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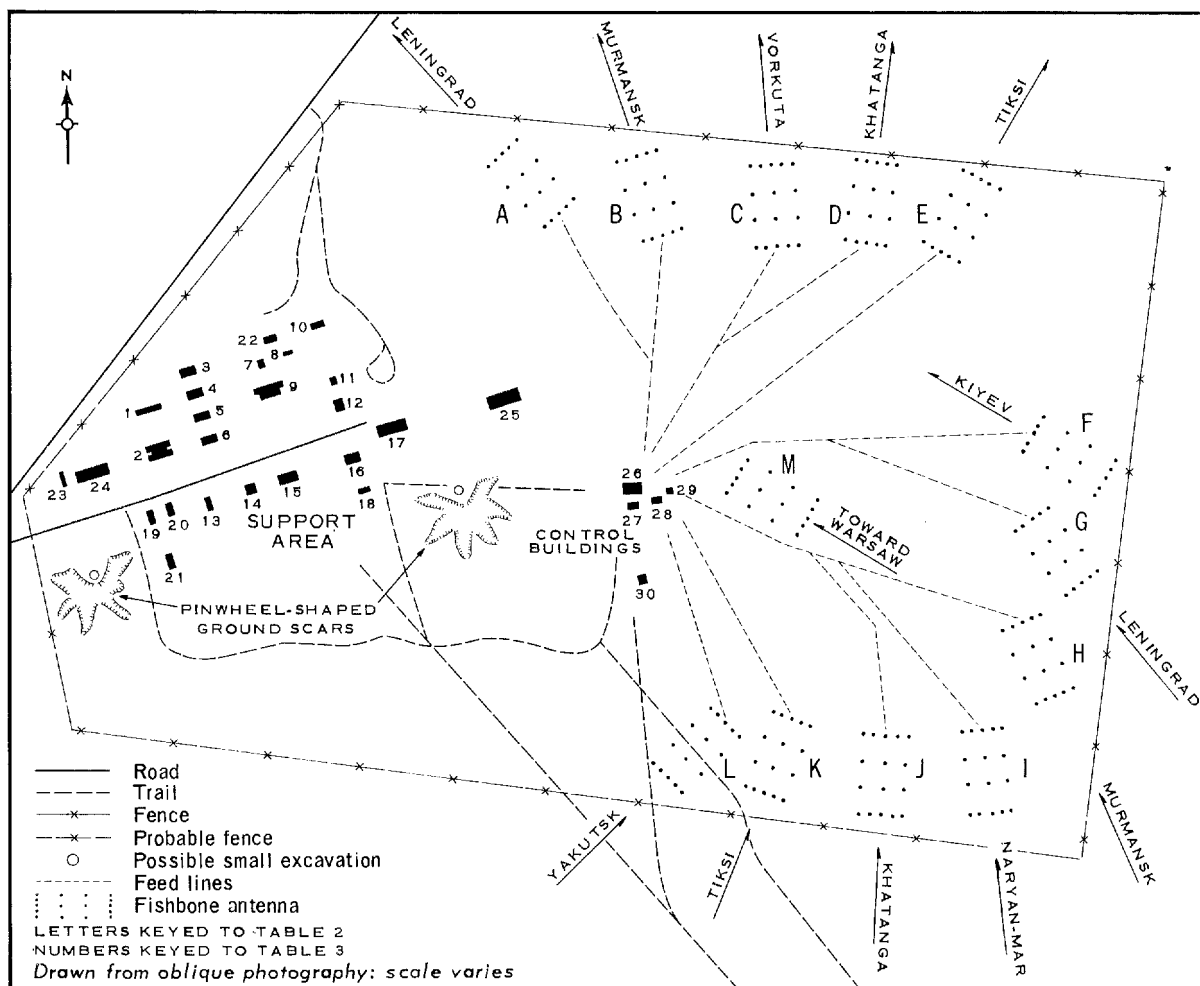


FIGURE 3. LAYOUT OF FISHBONE ANTENNA FACILITY.

Table 3. Additional Data on Structures at Fishbone Antenna Facility (Numbers Keyed to Figure 3)

Item Number	Type of Structure (H=hip roof, G=gable roof)	Dimensions (ft, approx)	Item Number	Type of structure (H=hip roof, G=gable roof)	Dimensions (ft, approx)
1	Storage (G)	105 x 20	17	Storage (G)	145 x 45
2	Administrative (H)	100 x 60	18	Storage (G)	65 x 35
3-6	Barracks (G)	75 x 35	19-21	Storage (G)	55 x 25
7	Storage (G)	50 x 10	22	Storage (G)	60 x 45
8	Storage (G)	45 x 35	23	Control/maintenance (G)	55 x 25
9	Administrative (H)	125 x 75	24	Storage (G)	100 x 55
10	Storage (G)	60 x 40	25	Control/maintenance (G)	150 x 50
11	Storage (G)	35 x 30	26	Control/maintenance (G)	85 x 40
12	Storage (G)	55 x 45	27	Control/maintenance (G)	35 x 15
13	Storage (G)	75 x 30	28	Control/maintenance (G)	55 x 30
14	Storage (H)	65 x 55	29	Control/maintenance (G)	--
15	Storage (G)	90 x 50	30	Control/maintenance (G)	60 x 30
16	Storage (G)	65 x 45			

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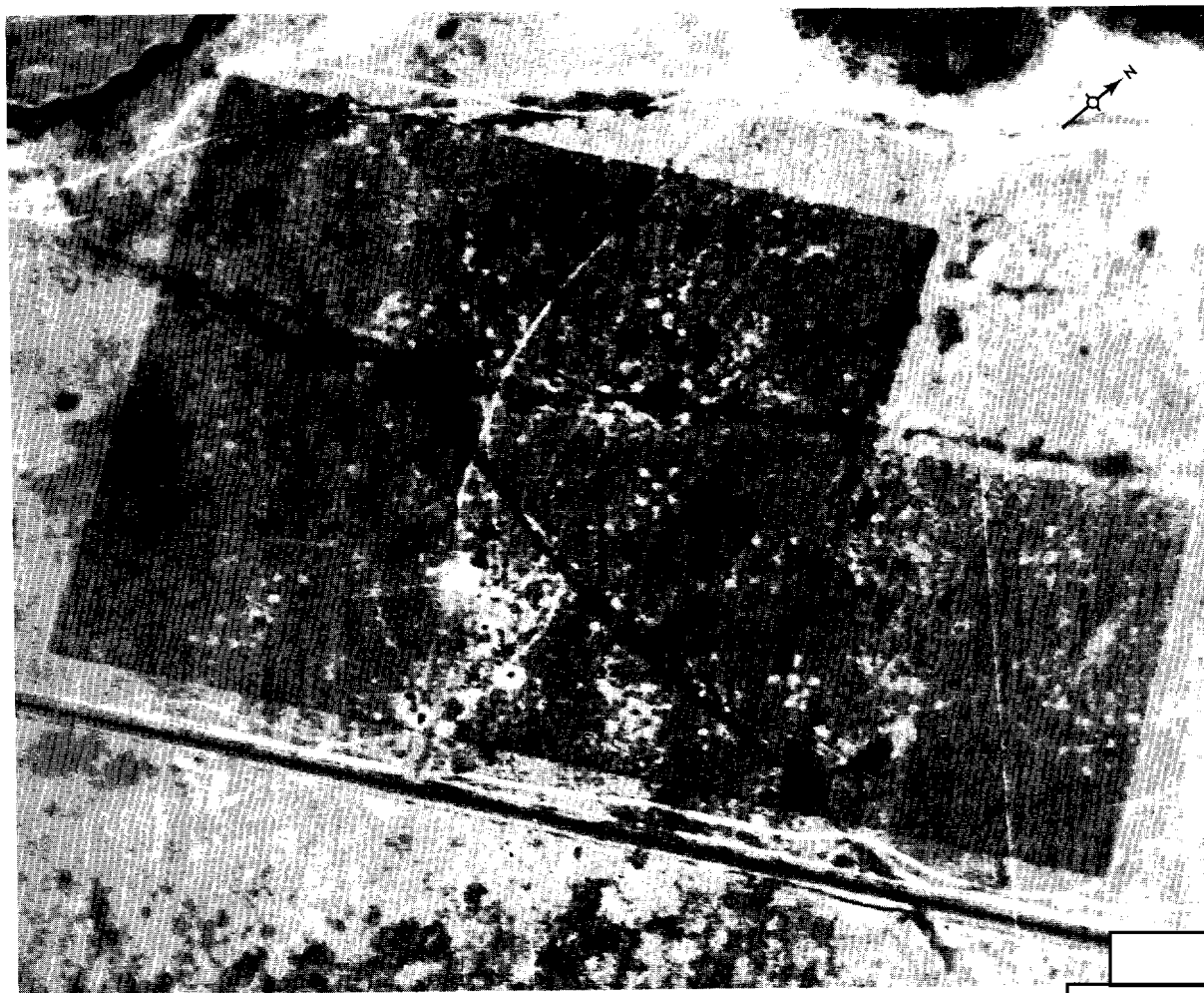


FIGURE 4. RHOMBIC ANTENNA HF COMMUNICATIONS RECEIVING FACILITY.

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Table 4. Technical Data for Rhombic Antennas near Ili (Letters Keyed to Figure 5)

Antenna Letter	Major Axis (ft)	Minor Axis (ft)	Length 1 Side (ft)	Tilt Angle (° ')	Wave Angle (°)	Wavelengths per Leg Length	Computed Frequency (mc)	Skip Distance (sm, approx)	Initial Great-Circle Bearing (±3°)	Probable Correspondent
A*	740	350	410							Moscow
B	370	175	210							Moscow
C	370	175	205							Krasnodar (Astrakhan)
D	710	350	410							Krasnodar (Astrakhan)
E*	710	350	410							Khabarovsk
F	500	235	280							Khabarovsk
G*	370	175	200							Khabarovsk

\*Double rhombic.

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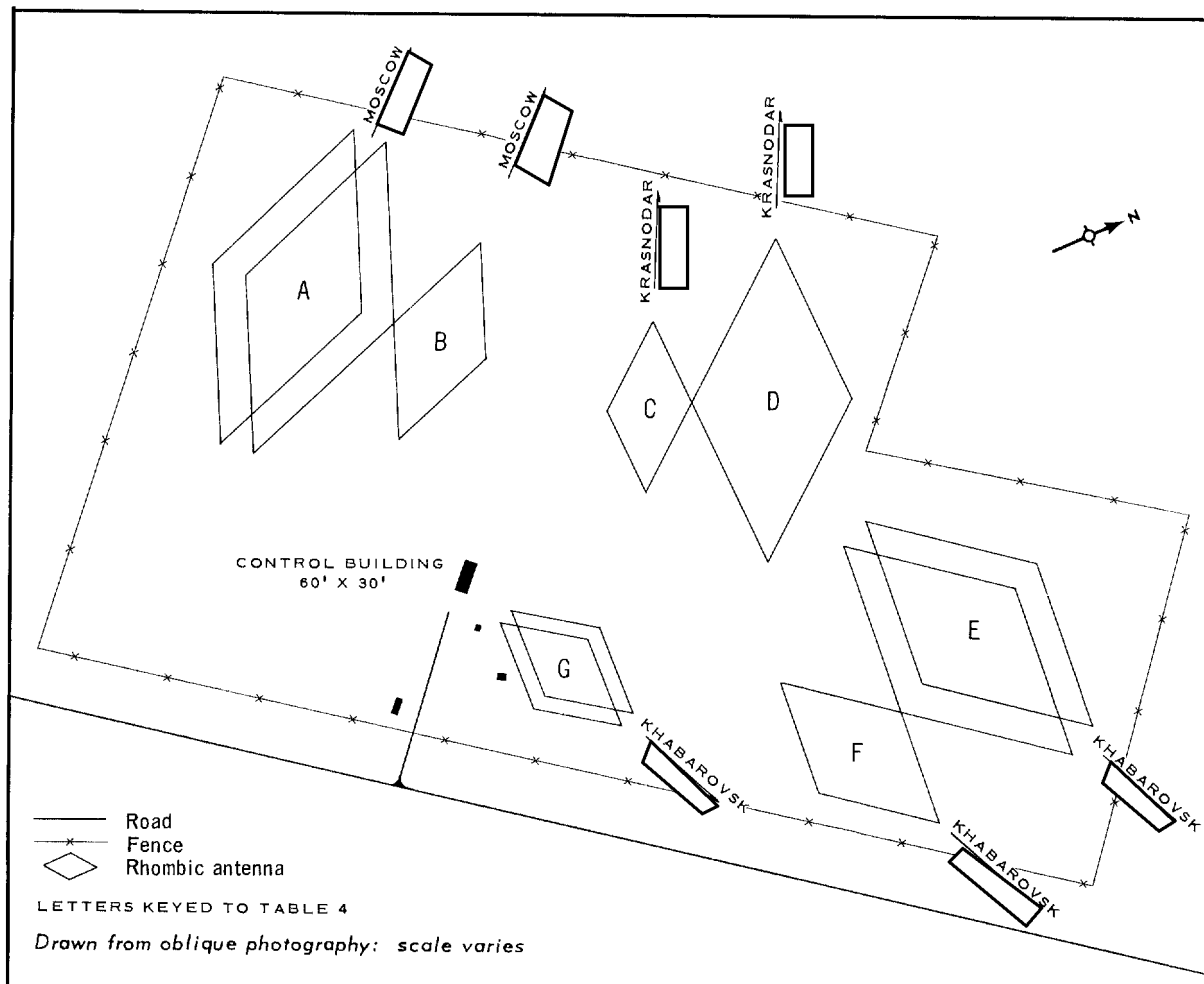
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FIGURE 5. LAYOUT OF RHOMBIC ANTENNA FACILITY.

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#### REFERENCES

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#### MAPS OR CHARTS

USAF. US Air Target Chart, Series 200, Sheet 03 29-2III, 2d ed, Jan 64, scale 1:200,000 (SECRET)

#### DOCUMENTS

1. NPIC. R-1/63, *Possible Antiballistics Missile Launch Area, Semipalatinsk, USSR*, Jan 63 (TOP SECRET)



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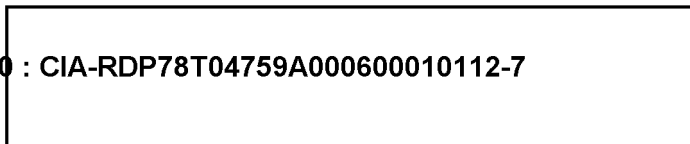
#### REQUIREMENT

CIA. C-RR4-81,916

#### NPIC PROJECT

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